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IMPROVED TRAY WASTE OUTLETS

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(57) Claim

1. A floor tray fitting for forming a waste outlet through a substantially flat floor tray and including:-

a tray mounting assembly comprising a lower mounting assembly and a floor outlet assembly engageable with one another through a floor tray aperture formed in the substantially flat floor tray;

respective opposed radially extending clamping surfaces on said lower mounting assembly and said floor outlet assembly which are arranged to overlie the flat tray portion about the periphery of said aperture to clamp said floor tray therebetween;

a waste inlet to said floor outlet assembly, said waste inlet being elevated above the clamping surface of said floor outlet assembly and being supported in use by a floor laid over said substantially flat floor tray, and

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outlet means from said tray mounting assembly, said outlet means being engageable with a waste pipe terminated beneath said floor tray.

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CHRISTIAN CLAUDE LALOT

(Patent Application No. PH 05297)

COMPLETE SPECIFICATION FOR THE INVENTION ENTITLED:-

"IMPROVED TRAY WASTE OUTLETS"

This invention relates to improved tray fittings and in particular it relates to tray fittings for shower trays.

Shower recesses and the like utilize a metal waste tray to prevent water from the shower recess passing to the supporting floor structure. Such waste trays may be formed on-site from copper sheet to suit the particular shower recess. During installation, the waste trays are apertured to permit drainage therethrough to a waste discharge pipe which is installed below floor level. The connection between the waste tray and the waste pipe is formed by brazing a brass tray fitting to the tray and connecting a plastic adaptor to the fitting beneath the tray so that when the tray is placed in position the plastic adaptor can be glued/welded to the upstand portion of the waste discharge pipe.

There are many disadvantages associated with this arrangement. For example, the upstand portion of the waste discharge pipe has to be terminated below the surface of the floor in order that it may connect to the adaptor beneath the tray. Accordingly in buildings utilizing a concrete floor slab the waste discharge pipe upstand must be arranged in a relatively large recess so that a saw may be positioned in the recess to cut the waste discharge pipe at the desired level below the floor.

The portion of the waste tray above the recess and about the waste fitting remains unsupported. In use this can

lead to flexing of the tray adjacent the tray fitting and cracking of adjacent tiles or other material used to line the floor tray. A further advantage associated with the present
5 arrangement is that the connections between the tray fitting, the waste pipe and the tray are permanent connections and faults in these connections can only be accessed by cutting the floor of the tray about the tray fitting so that either or both the tray and/or the tray fitting may be removed for
10 inspection and/or replacement. This of course is a time consuming operation and may involve considerable on-site brazing.

The present invention aims to alleviate the abovementioned disadvantages and to provide a floor tray
15 fitting which will be reliable and efficient in use. Other objects and advantages of this invention will hereinafter become apparent.

A floor tray fitting for forming a waste outlet through a substantially flat floor tray and including:-
20 a tray mounting assembly comprising a lower mounting assembly and a floor outlet assembly engageable with one another through a floor tray aperture formed in the substantially flat floor tray;

respective opposed radially extending clamping surfaces
25 on said lower mounting assembly and said floor outlet assembly which are arranged to overlie the flat tray portion about the periphery of said aperture to clamp said floor tray



therebetween;

a waste inlet to said floor outlet assembly, said waste inlet being elevated above the clamping surface of said floor outlet assembly and being supported in use by a floor laid over said substantially flat floor tray, and

5 outlet means from said tray mounting assembly, said outlet means being engageable with a waste pipe terminated beneath said floor tray.



engage slidably in the waste pipe. The outlet assembly preferably supports a grate spaced above the floor tray base whereby tiles may be set substantially flush with said grate on a concrete bed or the like supported in said floor tray.

5 It is also preferred that drain means be provided through said outlet assembly adjacent the tray base.

..... In the preferred form of tray fittings the lower
..... mounting assembly is internally threaded for engagement with
..... an externally threaded tubular stem of said outlet and
..... 10 complementary shoulders are provided on said lower mounting
assembly and said floor outlet assembly which overlie one
another at opposite sides of the tray base. Of course other
conventional forms of releasable couplings may be used to
connect the upper and lower mounting assembly to the outlet
..... 15 housing and of course the lower mounting assembly could extend
upwardly through said aperture to engage with said floor
..... outlet assembly. Suitable sealing means such as O-ring seals
or the like may be interposed between the shoulders and the
respective opposed faces of the tray base. Alternatively a
..... 20 mastic or the like may be used to form the seal with the tray
base. The lower mounting assembly and the floor outlet
assembly may be formed from a plastics material or from metal
as desired.

In order that this invention may be more readily
25 understood and put into practical effect, reference will now

be made to the accompanying drawings which illustrate typical embodiments of this invention and wherein:-

FIG 1 is an exploded view of a shower tray fitting;

5 FIG 2 is a cross-sectional view illustrating a typical application of the shower tray fitting of FIG 1;

FIG 3 is an exploded view of an alternate form of shower tray fitting, and

10 FIG 4 is a cross-sectional view of an installation using the tray fitting in FIG 3.

Referring to FIGS 1 and 2 it will be seen that the shower tray fitting 10 includes a lower mounting assembly 11 which is formed from a plastics material and provided with a connector socket 12 whereby it may be glued to the upstand portion of a waste pipe 13. The body part 14 intermediate the connector socket 12 and the uppermost flange 15 of the mounting assembly 11 is provided with a stepped bore 17 which steps inwardly to the bore of the connector socket 12. This is internally threaded at 18 to enable the upper plastics clamping member 20 to be threadedly engaged therewith. If desired, suitable gripping means such as key slots or the like may be formed in the upper clamping member 20 to enable it to be engaged by a suitable tool and screwed into engagement with the lower housing 11.

25 The upper clamping member 20 is provided with a drip

flange 21 which acts as a drip tray for catching water which may seep between the elevated grate supporting assembly 23 and the encasing concrete. The drip flange 21 is provided with an upstanding rim 22 and the grate assembly is apertured at 26 to permit seepage to pass into the interior thereof for passage to the waste pipe 13. The flange 21 is provided with a centrally threaded bore 19 to enable the metal grate assembly 23 to be screw connected thereto.

The opposing faces of the flanges 15 and 21 are each provided with an O-ring locating groove, such as the groove 24 in the lower flange 14, in which respective O-rings 25 and 26 may be located for engagement with the top and underside surfaces of the floor tray 27 to enable the tray fitting 10 to be clamped sealably about the outlet aperture provided in the shower tray 27.

In use, the floor slab 30 is formed with a recess 31 about the upstand portion 32 of the waste pipe 13. The upstand portion 32 is cut to a length such that when the lower housing 11 is engaged thereon and sealably connected thereto, such as by gluing, the top face of the flange 14 will lie flush with the floor 29. Concrete or other suitable grout or fill is then used to fill the recess 31 about the lower housing 11 so as to fixedly secure it into the floor slab 30. Ribs or other locating means may be provided on the external surface of the lower housing assembly to key it to the floor.

The tray aperture 32 may be formed oversized to enable fine position adjustment of the shower tray to be preformed without affecting operative alignment of the aperture 32 with the lower mounting 11.

5 The upper clamping member 20 is then placed through the aperture 32 and screwed tightly into the lower mounting 11 so that the flanges 14 and 21 and their associated O-rings, engage sealably with opposite sides of the tray base 33. The necessary concrete 34 and tiles 35 may then be placed in the 10 tray about the upper housing 20 to complete the installation.

It will be seen from FIG 2 that in an installation made in accordance with the present invention the floor of the shower tray adjacent the waste outlet is fully supported so that it will not flex when a load is placed upon the fitting 15 10, and at any stage during or after installation the shower tray and/or the tray fitting 10 can be disassembled without the need to cut the metal tray and to re-weld upon re-installation.

The tray fitting 40 illustrated in FIGS 3 and 4 20 includes a floor outlet assembly 41 which extends above the shower tray 42 to enable concrete 39 and tiles 43 to be placed thereabout, and a lower mounting assembly 44 which is adapted to extend sealably into the upper end of a waste pipe 45. The floor outlet supports a removable grate 38 in its upper end 25 through which waste water may flow to the waste pipe. The

lower mounting assembly 44 is in the form of a circular nut which screws onto the threaded tubular stem 46 of the floor outlet assembly 41. The stem 46 in use extends through the outlet aperture 47 in the tray base 48. A flat annular seal 49 is clamped between the upper faces of the mounting assembly 44 and the base 48 to form a sealed connection therewith.

The lower mounting assembly 44 is provided with an external seal recess 50 in which a large rubber seal 51 is located. The lower portion of the mounting assembly 44 below the seal recess 50 is cut away to permit limited degree of angular misalignment between the waste pipe 45 and the base 52 of the outlet assembly 41 without causing the seal 51 to become ineffective. In this embodiment, the waste pipe 44 is terminated flush with the floor slab 53.

In use, the tray 45 may be positioned so that its preformed outlet aperture 47 aligns with the waste pipe 45 or the outlet aperture may be formed after the tray 42 has been fitted in place and the aperture position marked. The tray is removed and the fitting 40 is screwed sealably to the tray 42 through the outlet aperture 47. The tray 42 complete with the installed tray fitted 40 is then lowered into position with the lower mounting assembly 44 sliding sealably into the waste pipe 45. The concrete 39 and tiles 43 are then placed in position about the outlet assembly 41. In this respect it will be seen that the outer surface of the latter is waisted

at 56 so that it is fixed into the concrete base slat 53. A weep hole 57 is provided in the side wall of the outlet assembly to drain seepage to the waste pipe 45.

The waste outlets described above may be used as general purpose outlets and of course they can be used with trays or floor panels formed from fibreglass or other plastics material or timber or the like. However it will of course be realised that the above has been given only by way of illustrative example of this invention and that all such modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as is defined in the appended claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A floor tray fitting for forming a waste outlet through a substantially flat floor tray and including:-

a tray mounting assembly comprising a lower mounting assembly and a floor outlet assembly engageable with one another through a floor tray aperture formed in the substantially flat floor tray;

respective opposed radially extending clamping surfaces on said lower mounting assembly and said floor outlet assembly which are arranged to overlie the flat tray portion about the periphery of said aperture to clamp said floor tray therebetween;

a waste inlet to said floor outlet assembly, said waste inlet being elevated above the clamping surface of said floor outlet assembly and being supported in use by a floor laid over said substantially flat floor tray, and

outlet means from said tray mounting assembly, said outlet means being engageable with a waste pipe terminated beneath said floor tray.

2. A floor tray fitting as claimed in claim 1 and including a seal assembly which provides a sealing connection between said tray mounting assembly and said tray.

3. A floor tray fitting as claimed in Claim 1 or Claim 2, wherein said floor outlet assembly includes a grate assembly spaced above said seal assembly.



4. A floor tray fitting as claimed in Claim 3, wherein said grate assembly is associated with a lower externally threaded tubular outlet stem adapted to pass through said aperture and to screw into said lower mounting assembly.
5. A floor tray fitting as claimed in Claim 3 or Claim 4, wherein said grate assembly is supported by a waisted housing which extends upwardly from a lower shoulder adapted for support upon said tray.
6. A floor tray fitting as claimed in any one of claims 2 to 5, wherein said lower mounting assembly is in the form of nut which supports said seal assembly about its outer surface.
7. A floor tray fitting as claimed in any one of the preceding claims, wherein there is provided a bleed passage extending through said tray fitting above said clamping surfaces for draining seepage about the said floor outlet assembly.
8. A floor tray fitting as claimed in any one of claim 2 to 7, wherein said seal assembly comprises a resilient annular seal adapted to be engaged between complementary abutment surfaces on said floor outlet assembly and said lower mounting assembly.

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9. A floor tray fitting substantially as hereinbefore described with reference to any one of the accompanying drawings.

DATED THIS 29th. DAY OF September, 1989.

CLAUDE CHRISTIAN LALOT

by

PIZZEY & COMPANY PATENT ATTORNEYS



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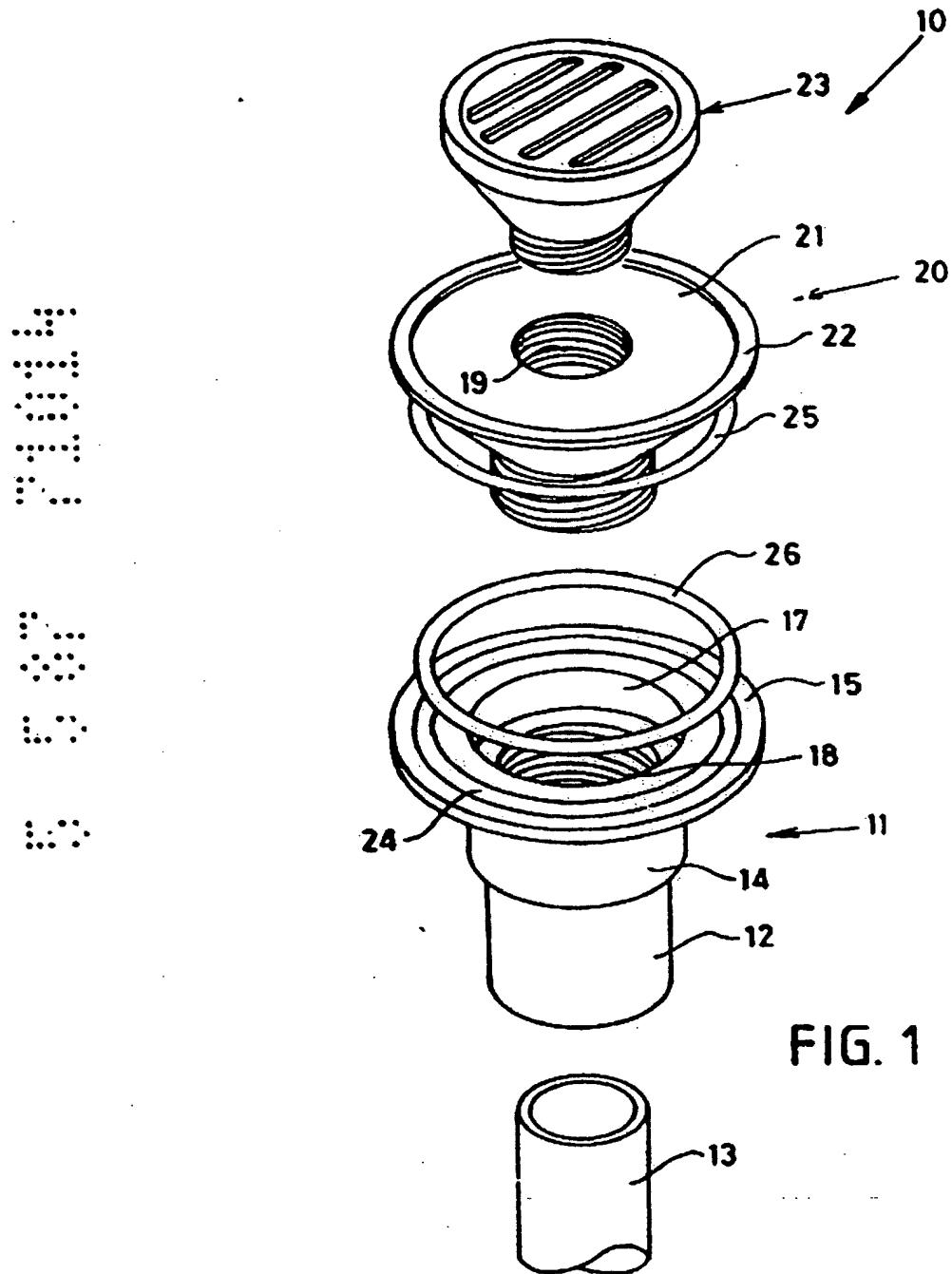
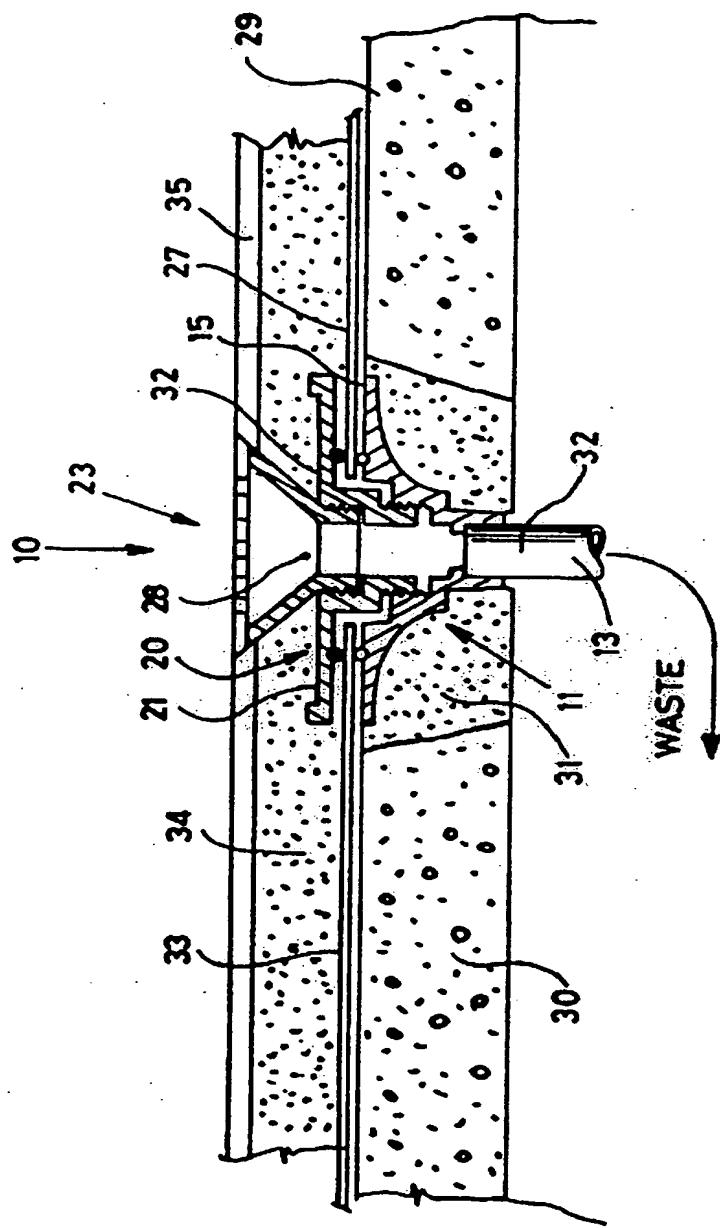


FIG. 1

FIG. 2



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